CLAIMS:

1. A method for installing a subsurface fibre optic cable system within a substrate comprising the steps of:

   cutting within said substrate a channel having a width not greater than about 50 mm ;

   installing a fibre optic cable within said channel;

   providing at least one node; and

   placing at least one of a cable junction box or cable loop within said channel node.

2. A method as defined in claim 1, wherein the width of said channel is between about 2 mm and 12 mm.

3. A method as defined in claim 1, wherein the width of said channel is between about 4.5 mm and 6 mm.

4. A method as defined in claim 1, wherein the depth of said channel is between about 8 mm and 500 mm.

5. A method as defined in claim 1, wherein the depth of said channel is between about 12 mm and 172 mm.

6. A method as defined in claim 1, wherein the depth of said channel is between about 40 mm and 70 mm.

7. A method as defined in claim 1, wherein the width of said channel adjacent to said nodes is not more than 20 mm larger than the width of said channel between said nodes.

8. A method as defined in claim 1, comprising the further step of forming one or more of said cable loops by providing a cable-winding device comprising a base having opposed ends and a cable receiver adjacent each end of said base, winding a length of said cable about said cable receiver thereby forming a loop of cable, removing said cable loop from said winding device, and positioning said cable loop within said channel node.

9. A method as defined in claim 8, wherein said winding device includes a pivoting arm for retaining said cable loop in place on said winding device prior to removal therefrom.

10. A method defined in claim 9, comprising the further step of providing a frame, placing said frame on said winding device, joining said formed cable loops with said frame, and placing of said cable loop and frame joined together within said node.

11. A method as defined in claim 10, wherein said frame comprises a wire loop.

12. A method as defined in claim 8, wherein said cable winding device includes a space for receiving said junction box within the interior of said cable loop, and the further steps of joining said junction box with said winding device and forming a cable junction within said junction box while said junction box is joined, sealing said junction box, and removal from said cable winding device of said formed cable loop and junction box together for burial within said channel node.

13. A method as claimed in claim 1, comprising the further step of splicing into one or more of said fibres within said junction box a passive optical component.

14. A method as defined in claim 1, wherein said channel is formed within the interstices between pavers.

15. A method as defined in claim 1, wherein said channel is formed within the interstices between portions of a masonry wall.

16. A method as defined in claim 1, wherein a metal implant is buried within said channel in proximity to said junction box.

17. A method as defined in claim 1, wherein indicators that are visible after said channel is covered are provided within said channel.

18. A method as defined in claim 1, wherein said there is further provided a generally continuous metal strip within said channel.

19. A method as defined in claim 1, wherein a plurality of cables are installed in overlying relationship within said channel.

20. A method as defined in claim 1, wherein said channel is cut at a junction between a roadway and a curb.

21. A method as defined in claim 1, wherein said channels and junction boxes are arranged to form a branching network of cables.

22. A method as defined in claim 1, comprising the further step of forming one or more loops of cable surrounding said junction box prior to placing said junction box within said channel.

23. A method as defined in claim 1, comprising the further step of providing one or more cable loops within said channel at a position removed from said

junction box.

24. A method as defined in claim 1, comprising the further step of sealing said cable and said junction box wholly within said channel to restore said substrate.

25. A method for installing a subsurface fibre optic cable system within a substrate comprising the steps of:

cutting within said substrate a channel having a width not greater than about 50 mm;

installing a fibre optic cable within said channel;

providing at least one node along said channel;

placing at least one cable loop within said at least one channel node; and

forming at least one of the cable loops with a cable-winding device comprising a base having opposed ends and a cable receiver adjacent each end of said base, winding a length of said cable about said cable receiver thereby forming a loop of cable, removing said cable loop from said winding device and positioning said cable loop within said channel node.

26. A method as defined in claim 25, wherein the width of said channel is between about 2 mm and 12 mm.

27. A method as defined in claim 25, wherein the width of said channel is between about 4.5 mm and 6 mm.

28. A method as defined in claim 25, wherein the depth of said channel is between about 8 mm and 500 mm.

29. A method as defined in claim 25, wherein the depth of said channel is

between about 40 mm and 70 mm.

30. A method as defined in claim 25 wherein the width of said channel adjacent to said nodes is about 20 mm greater than the width of said channel between said nodes.

31. A method as defined in claim 25, wherein said substrate comprises a pavement layer and said channel is entirely within said pavement layer.

32. A method as defined in claim 25, wherein said cable-winding device includes a pivoting arm for retaining said cable loop in place on said winding device prior to removal therefrom.

33. A method as defined in claim 25, comprising the further step of providing a frame, placing said frame on said winding device, joining said formed cable loops with said frame, and placing of said cable loop and frame joined together within said node.

34. A method as defined in claim 25, wherein said frame comprises a wire loop.

35. A method as defined in claim 25 further comprising the step of placing at least one cable junction box within said channel node.

36. A method as defined in claim 35, further comprising said cable winding device including a space for receiving said junction box within the interior of said cable loop, forming a cable junction within said junction box and removing from said cable winding device said formed cable loop and junction box together for positioning within said channel node.

37. A cable winder for forming a loop of a cable, said winder comprising a base

having opposed ends and a cable receiver at either end thereof for winding a length of cable about said cable receiver, and a frame attached to said base such that said frame can be subsequently released from said cable winder.

38. A cable winder as defined in claim 37, further comprising pivoting arms to retain said cable loops thereon.

39. A cable winder as defined in claim 37, further comprising an array of pegs for receiving said frame.

40. A cable winder as defined in claim 37, further comprising a space for receiving a cable junction box for forming a cable junction while said cable is wound about said winder.

41. A fibre optic cable for subsurface burial, said cable comprising a core comprised of at least one optical fibre, a moisture absorbent member, and an outer casing.

42. A cable as defined in claim 41, further comprising a moisture barrier wrapped about said core.

43. A cable as defined in claim 42, wherein said moisture absorbent member comprises fibres with a super absorbent polymer embedded therein.

44. A junction box for forming a junction between two or more fibre optic cables, said junction box comprising sidewalls spaced apart by a perimeter wall, entry and exit apertures within said perimeter walls and an interior space for forming a cable junction, said junction box being openable by separation of said sidewalls, and having moisture barrier means at said entry and exit apertures and between said sidewalls, said box having a sidewall to sidewall

width of less than 4 cm when closed.

45. A junction box as defined in claim 44, having a sidewall to sidewall width of less than 2 cm when closed.

46. A junction box as defined in claim 44, wherein one of said sidewalls comprises a flat base having a perimeter wall permanently joined therewith, and the other of said sidewalls comprises a planar top removably joined with said base.

47. A method for installing a subsurface fibre optic cable within a soil substrate comprising the steps of:

providing an elongate, rigid or semi-rigid member having a hollow interior with an open slot extending longitudently along one side thereof communicating with said hollow interior;

placing said cable within the interior of said member;

forming a trench within the said substrate; and

placing said member, with said slot facing downwardly and said cable within said hollow interior, within said trench.

48. A method as defined in claim 47, wherein said member comprises a tube.

49. A method as defined in claim 47, wherein said elongate member comprises sidewalls, the space between said sidewalls defining said hollow interior, said hollow interior having sufficient space for retaining at least two cables in stacked array.

50. A method as defined in claim 49, wherein said hollow member has upper and lower regions, said upper region incorporating a break-resistant protective strip within said hollow interior, above said space for said fibre optic cable.

51. A method as defined in claim 49, wherein said step of forming a trench comprises cutting a slit-like channel having a width and a depth less than the width and depth of said elongate member, and said elongate member is pressed downwardly into said substrate at said channel, to a depth sufficient for full burial within said substrate.

52. A fibre optic protector for subsurface burial, said protector comprising an elongate member having sidewalls defining a space there between, with a closed upper end and an open lower end, the space between said sidewalls being suitable for receiving and retaining two or more fibre optic cables in stacked array.

53. A protector as defined in claim 52, wherein said upper end comprises a tapered ridge.

54. A protector as defined in claim 52, wherein said lower end comprises a tapered ridge.

55. A protector as defined in claim 52, wherein said lower end includes mating locking portions for closing said sidewalls together.

56. A protector as defined in claim 52, further comprising a break-resistant protective strip.

57. A protector as defined in claim 56, wherein said protective strip is retained within said hollow interior and is removable therefrom.

58. A protector as defined in claim 56, wherein said protective strip is molded in place within an upper region of said protector.

59. A fibre optic cable network comprising at least one loop of fibre optic cable in an amount greater than the amount needed to connect the network.

60. A fibre optic cable network as defined in claim 59 wherein the amount of cable in said at least one loop comprises from about 0.3% to 10% of the total amount of fibre optic cable in the network.

61. A portion of a fibre optic cable network comprising:
   a plurality of fibre optic cables installed in one or more channels; and
   a plurality of nodes comprising:
      one or more cable junction boxes; and
      one or more cable loops.

62. A fibre optic cable network as defined in claim 61 wherein each of said nodes are separated from each other a distance not greater than 100 metres.

63. A fibre optic cable network as defined in claim 61 wherein each of said nodes are separated from each other a distance not greater than 50 metres.

64. A fibre optic cable network as defined in claim 61 wherein each of said nodes are separated from each other a distance not greater than an average of 40 metres.